

6. Apparatus for providing a liquid-tight seal, including: a container having an upper edge defining an opening; and an injection-molded lid configured to cover said opening, said lid having a channel at its periphery, said channel configured to abut and form a liquid-tight seal with said upper edge of said container when said lid is assembled on said container, including corresponding tongue and groove members on said lid and said container to interfit with each other within said channel, said tongue and groove members providing said structure to abut and form a liquid-tight seal with said upper edge of said container.

Remarks

Applicant forwards with this Amendment a Submission of Substitute Drawings.

Applicant has amended the Specification as set forth above to correct some typographical errors. Applicant respectfully submits that these corrections do not change the substance of the application or claims, and that persons of ordinary skill in the art will understand that the changes do not substantively modify the scope of the disclosure or claims.

The Examiner has rejected Claims 1-17 as anticipated by Wilkinson. Applicant respectfully traverses the rejection.

Wilkinson is directed to a very specific container and lid combination that differs from Applicant's in a number of ways. Wilkinson requires a particular non-corresponding shape between the lid channel and the upper edge of the container that is not

present in Applicant's invention. Specifically, Wilkinson discloses and is directed to a container having a rim "whose outer surface is inclined downwardly and outwardly." (col. 1, l. 13-15), but with a lid having a confronting wall that is not similarly inclined in its unassembled position, but instead is "substantially vertical" (col. 1, l. 30-31).

Thus, although the other portions of Wilkinson's lid channel correspond "in size and shape with ... the rim 8" (col. 2, l. 63-67), the inner surface 20 of Wilkinson's lid's exterior wall portion "does not conform exactly to the size and shape of the outer surface 10 of the rim 8 [of Wilkinson's container]." (col. 2, l. 67-70). Wilkinson's "improved seal" is dependent upon and provided by that particular non-correspondence in the shapes of those two confronting surfaces. Indeed, Wilkinson's "outer closure wall is stretched and the amount of stretching increases progressively downwardly with respect to this outer closure wall." (Col. 1, l. 42-45). Because this stretching results in an "inwardly directed pressure exerted by the outer closure wall against the rim" that improves the sealing relationship between Wilkinson's lid and container (col. 1, l. 46-47), it follows that the greater the stretch, the greater the pressure and the greater the sealing.

Wilkinson thus appears to teach a "progressively" greater sealing along the confronting outermost sloping surfaces. Perhaps more importantly, Wilkinson appears to teach virtually no "sealing" as any location other than between those two confronting non-corresponding surfaces. The other surfaces instead correspond in size and shape with each other.

Wilkinson also requires a difference in materials between the lid and the container, to provide the specific stretching and "improved sealing" function of Wilkin-

son's assembly. As explained throughout Wilkinson, the lower edge of its lid is stretched and distorted (and remains distorted throughout engagement) over the differently shaped container rim. Among other things, Wilkinson explains that, to provide that required deformation and stretch, the cover "should be more resilient than the container" (col. 2, l. 33-34) (emphasis added), with the container being made from metal, glass, or relatively rigid plastic such as high density polyethylene, and the cover being made from low density polyethylene (col. 2, l. 35-38).

Applicant's claimed inventions contrast with Wilkinson on both of the foregoing points. For example, rather than Wilkinson's non-corresponding surfaces, Claim 2 requires "said channel includes a corresponding tapered section, said tapering relationship providing contacting and sealing engagement between said lid and said container on both an inner contact surface and an outer contact surface of said upper edge."

Among other things, Applicant's disclosure discusses that difference:

"The preferred container upper edge 12 is tapered from a relatively thinner dimension to a relatively thicker dimension moving in from the upper edge 12 toward a bottom portion 11 of the container (FIG. 1). Preferred channel 40 includes a corresponding tapered section. The tapering relationship provides contacting and sealing engagement between the lid 30 and the container 10 on both an inner contact surface (abutting leg 42) and an outer contact surface (abutting leg 44) of the upper edge 12."

Specification page. 6, l. 14-19.

Applicant's claims directed to tongue and groove members likewise differ from Wilkinson. Applicant's Claim 6 requires "said tongue and groove members pro-

viding said structure to abut and form a liquid-tight seal with said upper edge of said container.” Among the embodiments exemplary of this aspect of Applicant’s invention is Figs. 6-9. In contrast, Wilkinson’s V members are never mentioned or disclosed as providing any “seal”, and certainly not as providing the structure to “form a liquid-tight seal”. Instead, Wilkinson’s V elements are shown and described as (1) used in conjunction with the sealing concept of the distorted bottom portion 19 of Wilkinson’s lid as the “sealing” force, and (2) functioning to urge Wilkinson’s surface 29 against the confronting surface 35 of the lid channel and surface 30 against surface 39.

For similar reasons, Applicant’s Claims 14 and 16 similarly should be allowed over Wilkinson, or over any prior art or permissible combination of which Applicant is aware. Claim 14 requires a lid “having a tapered channel at its periphery, said channel configured to abut and form a liquid-tight seal with an upper edge of a corresponding container when said lid is assembled on the container, said tapering providing contacting and sealing engagement between said lid and the container on both an inner contact surface and an outer contact surface of said channel.” As explained above, Wilkinson does not have a tapered channel within the scope of Applicant’s claim, certainly not one that provides Applicant’s claimed sealing engagement on both inner and outer contact surfaces.

Claim 16 likewise requires that “both legs of said cross section [be] configured to abut a corresponding container to thereby form a liquid-tight seal.” As explained above, no prior art of which Applicant is aware, either alone or in any permissible combination, discloses or makes obvious this invention.

Applicant has amended Claim 1 to include the limitations of the channel including “an outer skirt and an inner skirt generally downwardly directed, and said outer skirt includes a lower portion spaced outwardly from said container upper edge and said inner skirt includes a lower portion spaced inwardly from said container upper edge to facilitate ready alignment and engagement of said lid on said container, said lower portion including a removable tear strip, and corresponding tongue and groove members on said lid and said container to interfit with each other within said channel, said tongue member having a primary cross-sectional axis that is sloped with respect to the center of said container rather than being vertical.” Applicant respectfully submits that none of the prior art of which Applicant is aware, alone or in any permissible combination, discloses or makes obvious the invention of Claim 1.

Applicant has amended Claims 2 and 6 to include the limitations of original Claim 1. Accordingly, the scope of those claims is unchanged from that as originally filed.

Applicant has amended Claim 4 to include the limitations of original Claim 1, rather than having it depend from Claims 2 or 3. Accordingly, Claim 4 is now broader than originally filed. Because no prior art or permissible combination thereof discloses or makes obvious Claim 4’s “said outer skirt includes a lower portion spaced outwardly from said container upper edge to facilitate engagement of said lid on said container,” that Claim should be allowed. As explained in Applicant’s specification, the preferred embodiment of that element includes “a shoulder section 45, and makes it easier to ‘seat’ or align the lid 30 onto the container 10.” (Specification p. 7, l. 8-11).

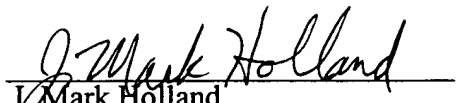
By the foregoing comments, Applicant has addressed all of the rejected claims, via the various dependencies between the pending claims.

In view of the remarks and amendments set forth above, it is thought that the application is now in condition for allowance, notice whereof is respectfully requested of the Examiner.

Respectfully submitted,

Date:

6/13/02


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Enclosures

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend the application as described below.

In the Specification:

The paragraph beginning on page 8, line 5, has been amended as follows:

FIG. 3 illustrates, among other things, the preferred motion to engage the lid 30 with the container 10. By pushing in the direction indicated by arrow A, the skirt or flange 46 pivots outwardly and then back inwardly (as indicated by arrow B), as the lid “snaps” onto the container as the beads 48 and 50 pass over each other. For applications in which the seal between the lid 30 and container 10 does not need to be as rugged or withstand as much handling or force, the detent engagement described herein may not be necessary.

The paragraph beginning on page 8, line 12, has been amended as follows:

FIGS. 1 and 4 also illustrates the relationship of inner “walls” such as corner structure 47. Persons of ordinary skill in the art will understand that, in certain applications, it may be necessary or desirable to include various shapes (such as wall 47) within the lid ~~10~~30, spaced from the channel/seal elements of the lid and container. In such embodiments, the desired liquid-tight seal can best be maintained by providing the inner flange 42 (see FIG. 4) on the lid in abutting contact with the container upper edge 12 around the full perimeter of the container.

In the Claims:

1. Apparatus for providing a liquid-tight seal, including: a container having an upper edge defining an opening; and an injection-molded lid configured to

cover said opening, said lid having a channel at its periphery, said channel configured to abut and form a liquid-tight seal with said upper edge of said container when said lid is assembled on said container, in which said channel includes an outer skirt and an inner skirt generally downwardly directed, and said outer skirt includes a lower portion spaced outwardly from said container upper edge and said inner skirt includes a lower portion spaced inwardly from said container upper edge to facilitate ready alignment and engagement of said lid on said container, said lower portion including a removable tear strip, and corresponding tongue and groove members on said lid and said container to interfit with each other within said channel, said tongue member having a primary cross-sectional axis that is sloped with respect to the center of said container rather than being vertical.

2. Apparatus for providing a liquid-tight seal, including: a container having an upper edge defining an opening; and an injection-molded lid configured to cover said opening, said lid having a channel at its periphery, said channel configured to abut and form a liquid-tight seal with said upper edge of said container when said lid is assembled on said container. ~~The apparatus of Claim 1,~~ in which said container upper edge is tapered from a relatively thinner dimension to a relatively thicker dimension moving in from said upper edge toward a bottom portion of said container, and said channel includes a corresponding tapered section, said tapering relationship providing contacting and sealing engagement between said lid and said container on both an inner contact surface and an outer contact surface of said upper edge.

4. Apparatus for providing a liquid-tight seal, including: a container having an upper edge defining an opening; and an injection-molded lid configured to cover said opening, said lid having a channel at its periphery, said channel configured to abut and form a liquid-tight seal with said upper edge of said container when said lid is assembled on said container.~~The apparatus of Claim 2 or Claim 3,~~ in which said channel on said lid is formed by an inner skirt and an outer skirt, both of which are generally downwardly directed, and said outer skirt includes a lower portion spaced outwardly from said container upper edge to facilitate engagement of said lid on said container.

6. Apparatus for providing a liquid-tight seal, including: a container having an upper edge defining an opening; and an injection-molded lid configured to cover said opening, said lid having a channel at its periphery, said channel configured to abut and form a liquid-tight seal with said upper edge of said container when said lid is assembled on said container.~~The apparatus of Claim 1,~~ including corresponding tongue and groove members on said lid and said container to interfit with each other within said channel, said tongue and groove members providing said structure to abut and form a liquid-tight seal with said upper edge of said container.